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09/982,481	10/17/2001	Ming C. Hao	10014772-1	7017

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
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Fort Collins, CO 80527-2400

EXAMINER

WANG, JIN CHENG

ART UNIT PAPER NUMBER

2628

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,481

Applicant(s)

HAO ET AL.

Examiner

Jin-Cheng Wang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 44-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 44-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's submission filed on 10/26/2006 has been entered. Claims 1-43 have been canceled. Claims 44, 50, 56, and 62 have been amended. Claims 44-62 are pending in the application.

Response to Arguments

Applicant's arguments filed on October 26, 2006 has been considered, but are not found persuasive in view of the ground(s) of rejection set forth in the present Office Action.

Claims 44-62 are rejected under 35 U.S.C. § 102(a) as being anticipated by D. Keim, M. C. Hao, J. Ladisch, M. Hsu, U. Dayal, "Pixel Bar Charts: A New Technique for Visualizing Large Multi-Attribute Data Sets without Aggregation", HP Technical Report, April 11, 2001, pp. 1-10 (hereinafter Keim). At least one of the applicants (KRUG) is NOT one of the authors in the reference publication cited in above. The reference publication is NOT the applicant KRUG's work. Applicant KRUG has not contributed to the printed publication cited in above. The Declaration under MPEP 2132.01 is not proper at least for this reason. Moreover, the Declaration under MPEP 2132.01, as opposed to 37 CFR 1.131 or 37 CFR 1.132, is not proper at least for the reason that the declaration is not filed under CFR 1.131 or 37 CFR 1.132.

Claims 44-62 are also rejected under 35 U.S.C. § 102(a) as being anticipated by **M.C. Hao, J. Ladisch, U. Dayal, M. Hsu, A. Krug**; "Visual Mining of E-customer Behavior Using Pixel Bar Charts", HP Technical Report, June 20, 2001, pp. 1-7 (hereinafter Hao). At least one of

the applicants (Keim) is NOT one of the authors in the reference publication cited in above. The reference publication is NOT the applicant Keim's work. Applicant Keim has not contributed to the printed publication cited in above. The Declaration under MPEP 2132.01 is not proper at least for this reason. Moreover, the Declaration under MPEP 2132.01, as opposed to 37 CFR 1.131 or 37 CFR 1.132, is not proper at least for the reason that the declaration is not filed under CFR 1.131 or 37 CFR 1.132.

Applicant argues that Figures 4, 5 and 7 of Ankerst also illustrate visualizing all of the attributes of all of the records thus depicting using assigning multiple pixels to the same record. In response, Ankerst meets the claim limitations set forth in the claim 1 and similar claims for the reasons below. Applicant's claim 1 recites a pixel bar chart which is a graphically displayable array according to the Paragraph 1, Page 4 of applicant's specification. Applicant's specification at Paragraph 1, Page 4 also stated that a method for placement data for visualization of multidimensional data sets using **multiple pixel bar charts**. Thus, a pixel bar chart is a graphically displayable array, or a pixel bar chart within the multiple pixel bar charts. Ankerst at least discloses ONE pixel bar chart wherein a pixel is uniquely assigned a record. Ankerst at least discloses a pixel bar chart wherein a pixel uniquely represents a record (*e.g., the last row of the pixel bar charts of Fig. 3 represents a pixel bar chart which is particularly sorted by the attribute 120*). Therefore, Ankerst teaches the claim limitations set forth in the claim 1 and similar claims.

Ankerst discloses a method to form a pixel bar chart (e.g., the last row of the pixel bar charts of Fig. 3 represents a pixel bar chart which is particularly sorted by the attribute 120), comprising:

Obtaining a set of records, each record comprising a plurality of attributes (e.g., Pages 3 of Ankerst discloses data records of the DNA training data with a plurality of attributes and Fig 5 plots 50,000 data records from two different classes with two numerical attributes);

Assigning a pixel to each of said records so that every such record-assigned pixel in the chart is assigned to a different record (e.g., Figs. 3-5 and 7 discloses the pixel bar charts. e.g., the last row of the pixel bar charts of Fig. 3 represents a pixel bar chart which particularly sorted by the attribute 120 wherein every pixel in each of the charts is assigned to a unique record and the claim limitation that every pixel in the chart is assigned to a record is explicitly taught in column 2 of Page 3); and

Constructing the pixel bar chart (Figs. 3-5 and 7 disclose pixel bar charts) by arranging the record-assigned pixels according to a first ordering attribute (Fig. 3-5 and 7 discloses the first ordering attribute on the x-axis, e.g., the first attribute) so that each record-assigned pixel is adjacent at least one other record-assigned pixel (Figs. 3-5 and 7).

Specification

The disclosure is objected to because of the following informalities: on line 11 of Page 4, “utilize of” should be “utilize”. Appropriate correction is required.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 44-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 44 recites the limitation "**the record-assigned pixels**" in line 5 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The claims 45-49 depend upon the claim 44 and are rejected due to their dependency on the claim 44.

Claim 50 recites the limitation "**the record-assigned pixels**" in line 8 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The claims 51-55 depend upon the claim 50 and are rejected due to their dependency on the claim 50.

Claim 56 recites the limitation "**the record-assigned pixels**" in lines 11-12 of the claim. There is insufficient antecedent basis for this limitation in the claim.

The claims 57-61 depend upon the claim 56 and are rejected due to their dependency on the claim 56.

Claim 62 recites the limitation "**the record-assigned pixels**" in line 7 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 44-62 are rejected under 35 U.S.C. 102(a) as being anticipated by D. Keim, M. C. Hao, J. Ladisch, M. Hsu, U. Dayal, “Pixel Bar Charts: A New Technique for Visualizing Large Multi-Attribute Data Sets without Aggregation”, HP Technical Report, April 11, 2001, pp. 1-10 (hereinafter Keim).

Re Claims 44, 50, 56, and 62:

Keim discloses a method to form a pixel bar chart, comprising:

Obtaining a set of records, each record comprising a plurality of attributes (*e.g., Pages 2-3 of Keim disclose a set of data items corresponding to a set of records such as e-commerce sales transactions with data records having such attributes as product type, number of visits and dollar amounts; the product type is used later as the partitioning attribute and the number of visits and dollar amounts as the x and y ordering attributes. The color represents the dollar amount spent by the corresponding customer wherein high dollar amounts correspond to bright colors and low dollar amounts to dark colors*);

Assigning a pixel to each of said records so that every such record-assigned pixel in the chart is assigned to a different record (*e.g., Page 2 of Keim discloses the one-to-one correspondence between the data records and pixels in the pixel bar charts; see Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10*); and

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Constructing the pixel bar chart (*Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10 disclose pixel bar charts*) by arranging the record-assigned pixels according to a first ordering attribute (*Fig. 7 discloses the first ordering attribute on the x-axis and the second order attribute on the y-axis as does Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10*) so that each record-assigned pixel is adjacent at least one other record-assigned pixel (*Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10*).

The claims 50, 56 and 62 are subject to the same rationale of rejection set forth in the claim 44.

Re Claims 45, 51, and 57:

The claim 45 encompasses the same scope of invention as that of the claim 44 except additional claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels. However, Keim further discloses the claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels (*Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10. See also Page 2-3 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer*).

The claims 51 and 57 are subject to the same rationale of rejection set forth in the claim 45.

Re Claims 46, 52, and 58:

The claim 46 encompasses the same scope of invention as that of the claim 45 except additional claim limitation the visual indicator comprises color. However, Keim further discloses the claim limitation the visual indicator comprises color (*Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10*. See also Page 2-3 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer, e.g., sales amount, number of visits or sales quantity).

The claims 52 and 58 are subject to the same rationale of rejection set forth in the claim 46.

Re Claims 47, 53 and 59:

The claim 47 encompasses the same scope of invention as that of the claim 44 except additional claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes and said method further comprises assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels. However, Keim further discloses the claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes and said method further comprises assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels (*Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10*. See also Page 2-3 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer; e.g., Pages 2-3 of Keim disclose a set of data items corresponding to a set of records such as e-commerce

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*sales transactions with data records having such attributes as product type, number of visits and dollar amounts; the product type is used later as the partitioning attribute and the number of visits and dollar amounts as the x and y ordering attributes. **The color represents the dollar amount spent by the corresponding customer wherein high dollar amounts correspond to bright colors and low dollar amounts to dark colors**).*

The claims 53 and 59 are subject to the same rationale of rejection set forth in the claim 47.

Re Claims 48, 54, and 60:

The claim 48 encompasses the same scope of invention as that of the claim 44 except additional claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the method further comprises causing the width of at least one column to be different than the width of at least one other column. However, Keim further discloses the claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the method further comprises causing the width of at least one column to be different than the width of at least one other column (e.g., Figs. 1b, 3b, 4 and 9-10).

The claims 54 and 60 are subject to the same rationale of rejection set forth in the claim 48.

Re Claims 49, 55 and 61:

The claim 49 encompasses the same scope of invention as that of the claim 44 except additional claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute. However, Keim further discloses the claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute (Figs. 1b, 2, 3b, 4a, 4b, 4c and 9-10. See also Page 2-3 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer; e.g., Pages 2-3 of Keim disclose a set of data items corresponding to a set of records such as e-commerce sales transactions with data records having such attributes as product type, number of visits and dollar amounts; the product type is used later as the partitioning attribute and the number of visits and dollar amounts as the x and y ordering attributes. **The color represents the dollar amount spent by the corresponding customer wherein high dollar amounts correspond to bright colors and low dollar amounts to dark colors; see also Pages 6-7 for the partitioning algorithm or the pixel placement algorithm; see Figs. 8-10 for the sub-groups of pixels according to a second dividing attribute).**

The claims 55 and 61 are subject to the same rationale of rejection set forth in the claim 49.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 44-62 are rejected under 35 U.S.C. 102(b) as being anticipated by M. Ankerst, M. Ester, H.-P. Kriegel, “Towards an effective cooperation of the computer and the user for classification”, Proc. 6th Int. Conf. On Knowledge Discovery and Data Mining, (KDD ‘2000), Aug. 20-23, 2000, Boston, MA, 2000, pp. 1-10 (hereinafter Ankerst).

Re Claims 44, 50, 56, and 62:

Ankerst discloses a method to form a pixel bar chart (e.g., the last row of the pixel bar charts of Fig. 3 represents a pixel bar chart which is particularly sorted by the attribute 120), comprising:

Obtaining a set of records, each record comprising a plurality of attributes (*e.g., Pages 3 of Ankerst discloses data records of the DNA training data with a plurality of attributes and Fig 5 plots 50,000 data records from two different classes with two numerical attributes*);

Assigning a pixel to each of said records so that every such record-assigned pixel in the chart is assigned to a different record (*e.g., Figs. 3-5 and 7 discloses the pixel bar charts. e.g., the last row of the pixel bar charts of Fig. 3 represents a pixel bar chart which particularly sorted by the attribute 120 wherein every pixel in each of the charts is assigned to a unique record and the claim limitation that every pixel in the chart is assigned to a record is explicitly taught in column 2 of Page 3*); and

Constructing the pixel bar chart (*Figs. 3-5 and 7 disclose pixel bar charts*) by arranging the record-assigned pixels according to a first ordering attribute (*Fig. 3-5 and 7 discloses the first*

ordering attribute on the x-axis, e.g., the first attribute) so that each record-assigned pixel is adjacent at least one other record-assigned pixel (Figs. 3-5 and 7).

The claims 50, 56 and 62 are subject to the same rationale of rejection set forth in the claim 44.

Re Claims 45, 51, and 57:

The claim 45 encompasses the same scope of invention as that of the claim 44 except additional claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels. However, Ankerst further discloses the claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels (Figs. 3-5 and 7 wherein the colored pixels are clearly shown and Fig. 1 illustrates a possible color coding of the different class labels and Figs. 3-5 and 7 illustrate the color coded pixels wherein one segment of pixels has different colors from the other segment of pixels).

The claims 51 and 57 are subject to the same rationale of rejection set forth in the claim 45.

Re Claims 46, 52, and 58:

The claim 46 encompasses the same scope of invention as that of the claim 45 except additional claim limitation the visual indicator comprises color. However, Ankerst further discloses the claim limitation the visual indicator comprises color (*Figs. 3-5 and 7 wherein the colored pixels are clearly shown and Fig. 1 illustrates a possible color coding of the different class labels and Figs. 3-5 and 7 illustrate the color coded pixels wherein one segment of pixels has different colors from the other segment of pixels*).

The claims 52 and 58 are subject to the same rationale of rejection set forth in the claim 46.

Re Claims 47, 53 and 59:

The claim 47 encompasses the same scope of invention as that of the claim 44 except additional claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes and said method further comprises assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels. However, Ankerst further discloses the claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes (*e.g., Pages 3 of Ankerst discloses data records of the DNA training data with a plurality of attributes and Fig 5 plots 50,000 data records from two different classes with two numerical attributes*) and said method further comprises assigning a selectable visual indicator (*e.g., color*) to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels (*Figs. 3-5 and 7 wherein the colored pixels are clearly shown and Fig. 1 illustrates a*

possible color coding of the different class labels and Figs. 3-5 and 7 illustrate the color coded pixels wherein one segment of pixels has different colors from the other segment of pixels).

The claims 53 and 59 are subject to the same rationale of rejection set forth in the claim 47.

Re Claims 48, 54, and 60:

The claim 48 encompasses the same scope of invention as that of the claim 44 except additional claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the method further comprises causing the width of at least one column to be different than the width of at least one other column. However, Ankerst further discloses the claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the method further comprises causing the width of at least one column to be different than the width of at least one other column (*e.g., by splitting as disclosed in Page 3 by selecting the splitting attribute of Page 4; See Figs. 3-5 and 7 wherein the colored pixels are clearly shown and Fig. 1 illustrates a possible color coding of the different class labels and Figs. 3-5 and 7 illustrate the color coded pixels wherein one segment of pixels has different colors from the other segment of pixels).*

The claims 54 and 60 are subject to the same rationale of rejection set forth in the claim 48.

Re Claims 49, 55 and 61:

The claim 49 encompasses the same scope of invention as that of the claim 44 except additional claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute. However, Ankerst further discloses the claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute (*e.g., by splitting as disclosed in Page 3 by selecting the splitting attribute of Page 4; See Figs. 3-5 and 7 wherein the colored pixels are clearly shown and Fig. 1 illustrates a possible color coding of the different class labels and Figs. 3-5 and 7 illustrate the color coded pixels wherein one segment of pixels has different colors from the other segment of pixels; the second dividing attribute is the splitting attribute*).

The claims 55 and 61 are subject to the same rationale of rejection set forth in the claim 49.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by **others** in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 44-62 are rejected under 35 U.S.C. 102(a) as being anticipated by **M.C. Hao, J. Ladisch, U. Dayal, M. Hsu, A. Krug**; “Visual Mining of E-customer Behavior Using Pixel Bar Charts”, HP Technical Report, June 20, 2001, pp. 1-7 (hereinafter Hao).

Re Claims 44, 50, 56, and 62:

Hao discloses a method to form a pixel bar chart, comprising:

Obtaining a set of records, each record comprising a plurality of attributes (*e.g., Pages 1 and 5-6 of Hao disclose a set of data items corresponding to a set of records such as e-commerce sales transactions with data records having such attributes as time type, number of visits and dollar amounts; the time type is the x-axis and the purchase dollar amount is the y-ordering attribute and the number of visits are the color attributes*);

Assigning a pixel to each of said records so that every such record-assigned pixel in the chart is assigned to a different record (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6*); and

Constructing the pixel bar chart (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6 disclose pixel bar charts*) by arranging the record-assigned pixels according to a first ordering attribute (*Page 5 discloses the first ordering attribute on the x-axis and the second order attribute on the y-axis as does e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6*) so that each record-assigned pixel is adjacent at least one other record-assigned pixel (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6*).

The claims 50, 56 and 62 are subject to the same rationale of rejection set forth in the claim 44.

Re Claims 45, 51, and 57:

The claim 45 encompasses the same scope of invention as that of the claim 44 except additional claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels. However, Hao further discloses the claim limitation for each record-assigned pixel assigning a selectable visual indicator to the record-assigned pixel based on an attribute value of each record so that some pixels have a different visual indicator than other pixels (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6. See also Page 5-6 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer*).

The claims 51 and 57 are subject to the same rationale of rejection set forth in the claim 45.

Re Claims 46, 52, and 58:

The claim 46 encompasses the same scope of invention as that of the claim 45 except additional claim limitation the visual indicator comprises color. However, Hao further discloses the claim limitation the visual indicator comprises color (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6. See also Page 5-6 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer, e.g., sales amount, number of visits or sales quantity*).

The claims 52 and 58 are subject to the same rationale of rejection set forth in the claim 46.

Re Claims 47, 53 and 59:

The claim 47 encompasses the same scope of invention as that of the claim 44 except additional claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes and said method further comprises assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels. However, Hao further discloses the claim limitation said records are obtained from a multidimensional data set in which each record comprises a plurality of attributes and said method further comprises assigning a selectable visual indicator to each record-assigned pixel based on an attribute of each record so that some pixels have a different visual indicator than other pixels (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6. See also Page 5-6 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer; e.g., Pages 5-6 and Fig. 6 of Hao disclose a set of data items corresponding to a set of records such as e-commerce sales transactions with data records having such attributes as time type, number of visits and dollar amounts*).

The claims 53 and 59 are subject to the same rationale of rejection set forth in the claim 47.

Re Claims 48, 54, and 60:

The claim 48 encompasses the same scope of invention as that of the claim 44 except additional claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the

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method further comprises causing the width of at least one column to be different than the width of at least one other column. However, Hao further discloses the claim limitation wherein the pixel bar chart comprises a plurality of columns, each column comprising a plurality of pixels and having a width measured in terms of pixels, and the method further comprises causing the width of at least one column to be different than the width of at least one other column (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6*).

The claims 54 and 60 are subject to the same rationale of rejection set forth in the claim 48.

Re Claims 49, 55 and 61:

The claim 49 encompasses the same scope of invention as that of the claim 44 except additional claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute. However, Hao further discloses the claim limitation of sorting the records into groups according to a first dividing attribute and partitioning the sorted records of each group into sub-groups according to a second dividing attribute (*e.g., Page 5-6; Figs. 1, 2, 4, 5, and 6. See also Page 5-6 and Figs. 5-6 that the pixels are colored corresponding to the different attribute values wherein the color represent an additional attribute of the customer; e.g., Pages 5-6 of Hao disclose a set of data items corresponding to a set of records such as e-commerce sales transactions with data records having such attributes as time type, number of visits and dollar amounts*).

The claims 55 and 61 are subject to the same rationale of rejection set forth in the claim 49.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

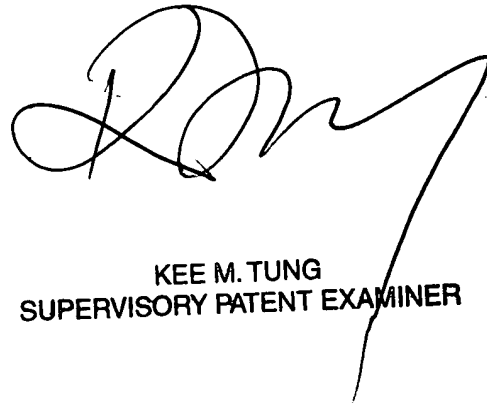
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung can be reached on (571) 272-7794. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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